UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/851,408	05/07/2001	Bruce C. Rothaar	060783/P002US/10102073	1883

29053 7590 11/29/2006

DALLAS OFFICE OF FULBRIGHT & JAWORSKI L.L.P.
2200 ROSS AVENUE
SUITE 2800
DALLAS, TX 75201-2784

EXAMINER	
WILLIAMS, LAWRENCE B	
ART UNIT	**PAPER NUMBER**
2611	

DATE MAILED: 11/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/851,408	ROTHAAR ET AL.	
	Examiner	Art Unit	
	Lawrence B. Williams	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 September 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *20-30* is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see Remarks, filed 18 September 2006, with respect to the rejection(s) of claim(s) 1-19 under 35 USC 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Richey US Patent 5,208,837.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claim 1-8, 12-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richey (US Patent 5,208,837) in view of Fullerton et al. (US Patent 6,823,023 B1).

(1) With regard to claim 1, Richey discloses in Fig(s). 1, 2, 3, an automatic gain control (Fig. 1, element 41) system comprising: means (Fig. 2, element 21) operable, at least in part, to certain tabulated statistics for directing the receiver gain of said gain control system (abstract, Richey discloses the DSP continually monitoring the information spectrum). Richey is silent as to information concerning periodicity and duration of the RF interference, though information pertaining to such could be made readily available to one of ordinary skill in the art would at the

time of invention since Richey does monitor the information spectrum before making adjustments.

However, Fullerton et al. discloses well-known feedback techniques wherein he discloses an automatic gain control system (col. 17, lines 5-6), an adjustment of power level of transmission would inherently include automatic gain control) comprising: means for tabulating statistical information of RF interference (Fullerton et al. discloses collecting, a synonym for tabulating, col. 17, line 23-25, which would inherently imply some type of means for tabulating) about periodicity and duration of RF interference (col. 17, lines 36-38); and means operable, at least in part for directing the gain of the gain control circuit (Again, Fullerton discloses one adjustment of adjusting power level of transmission to mitigate the effects of expected or predicted noise (col. 17, lines 2-9), which would inherently imply means for adjusting the gain of the gain control circuit).

One of ordinary skill in the art would have been motivated to use the tabulated statistical information gathered at the distal receiver to control the gain of the AGC at the receiver instead of transmitting the information to the transmitter for use at gain control as taught by Fullerton et al. as a method to save time, resources and as a method of conserving bandwidth.

(2) With regard to claim 2, Fullerton et al. also discloses wherein said means for tabulating also tabulates statistical information about the strength of said RF interference (col. 16, lines 63-65).

One of ordinary skill in the art would have been motivated to use the tabulated statistical information gathered at the distal receiver to control the gain of the AGC at the receiver instead

of transmitting the information to the transmitter for use at gain control as taught by Fullerton et al. as a method to save time, resources and as a method of conserving bandwidth.

(3) With regard to claim 3, Fullerton et al. also discloses wherein the means for tabulating comprises means for detecting the interference (col. 15, lines 50-53; Fullerton et al. discloses the detection or recognition of a pattern associated with the noise or interference which would inherently imply a means for detecting).

One of ordinary skill in the art would have been motivated to use the tabulated statistical information gathered at the distal receiver to control the gain of the AGC at the receiver instead of transmitting the information to the transmitter for use at gain control as taught by Fullerton et al. as a method to save time, resources and as a method of conserving bandwidth.

(4) With regard to claim 4, Fullerton et al. also discloses in Fig. 15, element 512, wherein the means for detecting comprises an antenna.

One of ordinary skill in the art would have been motivated to use the tabulated statistical information gathered at the distal receiver to control the gain of the AGC at the receiver instead of transmitting the information to the transmitter for use at gain control as taught by Fullerton et al. as a method to save time, resources and as a method of conserving bandwidth.

(5) With regard to claim 5, Fullerton et al. also discloses wherein the means for detecting comprises means for monitoring an RF data stream for the interference (col. 22, lines 13-27).

One of ordinary skill in the art would have been motivated to use the tabulated statistical information gathered at the distal receiver to control the gain of the AGC at the receiver instead of transmitting the information to the transmitter for use at gain control as taught by Fullerton et al. as a method to save time, resources and as a method of conserving bandwidth.

(6) With regard to claim 6, Fullerton et al. also wherein said means for directing includes means for selecting at least one action from of a group of actions to reduce effects of said interference, said group of actions consisting of: maintaining gain levels, ignoring said interference; adjusting gain levels in response to gain of said signals (interpreted as applicant meaning said interference); raising gain level prior to onset of said interference; lowering gain level prior to onset of said interference; raising gain levels at cessation of said interference; and lowering gain levels at cessation of said interference (abstract, col. 17, lines 5-9).

One of ordinary skill in the art would have been motivated to use the tabulated statistical information gathered at the distal receiver to control the gain of the AGC at the receiver instead of transmitting the information to the transmitter for use at gain control as taught by Fullerton et al. as a method to save time, resources and as a method of conserving bandwidth.

(7) With regard to claim 7, Fullerton et al. also discloses means operable at least in part, to certain tabulated statistics for scheduling transmissions to avoid said interference (abstract).

One of ordinary skill in the art would have been motivated to use the tabulated statistical information gathered at the distal receiver to control the gain of the AGC at the receiver instead of transmitting the information to the transmitter for use at gain control as taught by Fullerton et al. as a method to save time, resources and as a method of conserving bandwidth.

(8) With regard to claim 8, Fullerton et al. also discloses means operable to certain tabulated statistics for changing an RF frequency of transmissions (col. 22, lines 26-31, Fullerton et al. discloses methods for altering the transmission of due to interference levels in which he lists several methods and includes "or by other measures"). It is well known in the art to alter the frequency of transmissions as a method of avoiding interference.

One of ordinary skill in the art would have been motivated to use the tabulated statistical information gathered at the distal receiver to control the gain of the AGC at the receiver instead of transmitting the information to the transmitter for use at gain control as taught by Fullerton et al. as a method to save time, resources and as a method of conserving bandwidth.

(9) With regard to claim 12, Fullerton et al. also discloses an adjustment of transmission parameters involving the use of (Hamming Codes or Reed-Solomon Codes). A means for providing this adjustment would be inherent.

One of ordinary skill in the art would have been motivated to use the tabulated statistical information gathered at the distal receiver to control the gain of the AGC at the receiver instead of transmitting the information to the transmitter for use at gain control as taught by Fullerton et al. as a method to save time, resources and as a method of conserving bandwidth.

(10) With regard to claim 13, claim 13 discloses limitations similar to those disclosed in claim 1. Therefore a similar rejection applies.

One of ordinary skill in the art would have been motivated to use the tabulated statistical information gathered at the distal receiver to control the gain of the AGC at the receiver instead of transmitting the information to the transmitter for use at gain control as taught by Fullerton et al. as a method to save time, resources and as a method of conserving bandwidth.

(11) With regard to claim 14, Fullerton et al. also discloses wherein said means for tabulating also tabulates statistical information about the strength of said RF interference (col. 16, lines 63-65).

One of ordinary skill in the art would have been motivated to use the tabulated statistical information gathered at the distal receiver to control the gain of the AGC at the receiver instead

of transmitting the information to the transmitter for use at gain control as taught by Fullerton et al. as a method to save time, resources and as a method of conserving bandwidth.

(12) With regard to claim 15, Fullerton et al. also discloses wherein the means for tabulating comprises means for detecting the interference (col. 15, lines 50-53; Fullerton et al. discloses the detection or recognition of a pattern associated with the noise or interference which would inherently imply a means for detecting).

One of ordinary skill in the art would have been motivated to use the tabulated statistical information gathered at the distal receiver to control the gain of the AGC at the receiver instead of transmitting the information to the transmitter for use at gain control as taught by Fullerton et al. as a method to save time, resources and as a method of conserving bandwidth.

(13) With regard to claim 16, Fullerton et al. also discloses in Fig. 15, element 512, wherein the means for detecting comprises an antenna.

One of ordinary skill in the art would have been motivated to use the tabulated statistical information gathered at the distal receiver to control the gain of the AGC at the receiver instead of transmitting the information to the transmitter for use at gain control as taught by Fullerton et al. as a method to save time, resources and as a method of conserving bandwidth.

(14) With regard to claim 17, Fullerton et al. also discloses wherein the means for detecting comprises means for monitoring an RF data stream for the interference (col. 22, lines 13-27).

One of ordinary skill in the art would have been motivated to use the tabulated statistical information gathered at the distal receiver to control the gain of the AGC at the receiver instead

of transmitting the information to the transmitter for use at gain control as taught by Fullerton et al. as a method to save time, resources and as a method of conserving bandwidth.

(15) With regard to claim 18, Fullerton et al. also wherein said means for directing includes means for selecting at least one action from of a group of actions to reduce effects of said interference, said group of actions consisting of: directing said gain to hold gain levels, ignoring said interference; directing said gain to adjust gain levels in response to gain of said signals (interpreted as "said interference); directing said gain to raise gain level prior to onset of said interference; directing said gain to lower gain level prior to onset of said interference; directing said gain to raise gain levels at cessation of said interference; and directing said gain to lower gain levels at cessation of said interference (abstract, col. 17, lines 5-9).

One of ordinary skill in the art would have been motivated to use the tabulated statistical information gathered at the distal receiver to control the gain of the AGC at the receiver instead of transmitting the information to the transmitter for use at gain control as taught by Fullerton et al. as a method to save time, resources and as a method of conserving bandwidth.

(16) With regard to claim 19, Fullerton et al. also wherein said means for directing includes means for selecting at least one action from of a group of actions to reduce effects of said interference, said group of actions consisting of: directing said gain to hold gain levels, ignoring said interference; directing said gain to adjust gain levels in response to gain of said signals (interpreted as "said interference); directing said gain to raise gain level prior to onset of said interference; directing said gain to lower gain level prior to onset of said interference; directing said gain to raise gain levels at cessation of said interference; and directing said gain to lower gain levels at cessation of said interference; scheduling RF transmissions to avoid said

interference; changing an RF frequency of transmissions; changing antenna polarity of RF transmissions; performing waveform subtraction of said interference; equalizing multipath events of an RF transmission; and increasing forward error correction of a transmission (abstract, col. 17, lines 5-9).

One of ordinary skill in the art would have been motivated to use the tabulated statistical information gathered at the distal receiver to control the gain of the AGC at the receiver instead of transmitting the information to the transmitter for use at gain control as taught by Fullerton et al. as a method to save time, resources and as a method of conserving bandwidth.

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Richey (US Patent 5,208,837) in combination with Fullerton et al. (US Patent 6,823,022 B1) as applied to claim 6 above and further in view of Lempiainen (US Patent 6,510,312 B1).

(1) With regard to claim 9, as noted above, Richey in combination with Fullerton et al. disclose all limitations of claim 6 above. They do not however disclose means operable at least in part, to certain tabulated statistics for changing antenna polarity of RF transmissions.

However, Lempiainen teaches means operable at least in part, to certain tabulated statistics for changing antenna polarity of RF transmissions (abstract, col. 1, lines 55-63).

It would have been obvious to one skilled in the art at the time of invention to incorporate the teachings of Lempiainen as a method of reducing intercellular interference (col. 1, lines 42-63).

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Richey (US

Patent 5,208,837) in combination with Fullerton et al. (US Patent 6,823,022 B1) as applied to claim 6 above and further in view of Gutleber (US Patent 4,457,007).

As noted above, Richey in combination with Fullerton et al. disclose all limitations of claim 6. They do not however disclose means operable at least in part, to certain tabulated statistics for performing waveform subtraction of said interference. Fullerton et al. does teach that other methods may be used for overcoming interference throughout the disclosure (col. 22, lines 28-31).

However, Gutleber teaches means operable at least in part, to certain tabulated statistics for performing waveform subtraction of said interference (abstract).

It would have been obvious to one of ordinary skill in the art at the time of invention to apply the method as taught by Gutleber as a method of reducing interference caused by multipath returns (col. 1, lines 46-57).

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Richey (US Patent 5,208,837) in combination with Fullerton et al. (US Patent 6,823,022 B1) as applied to claim 6 above and further in view of Eidson et al. (US Patent 6,256,477 B1).

As noted above, Richey in combination with Fullerton et al. disclose all limitations of claim 6 above. They do not however explicitly disclose means operable, at least in part, to certain tabulated statistics for equalizing multipath events of an RF transmission.

However, Eidson et al discloses means operable, at least in part, to certain tabulated statistics for equalizing multipath events of an RF transmission (col. 3, lines 1-15).

It would have been obvious to one skilled in the art at the time of invention to apply the teachings of Eidson et al. as a known method of mitigating multipath interference in an RF system.

Allowable Subject Matter

7. Claims 20-30 are allowed.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a.) Cho discloses in US Patents 6,229,797 B1 Circuit For Eliminating External Interference Signals In Code Division Multiple Access Mobile Phone.

b.) Richardson et al. discloses in US Patent 5,966,684 Method and Apparatus For Cancelling Periodic Electrical Interference.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence B Williams whose telephone number is 571-272-3037. The examiner can normally be reached on Monday-Friday (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ghayour Mohammad can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lawrence B. Williams

lbw

November 21, 2006